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OFFICIAL

60,427-238; 2000P07642US01

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Stuart
Serial Number: 09/802,592 Group Art Unit: 2644
Filed: March 9, 2001 Examiner: Pendleton, Brian
Title: RESONATOR FOR ACTIVE NOISE ATTENUATION SYSTEM

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE

Dear Sir:

In response to the Office Action of April 22, 2004, applicant requests consideration of the following arguments.

Claims 1-20 remain in the application including independent claims 1 and 9. Claims 5, 12, and 16-20 are indicated as allowable.

Claims 1, 2, 7, and 9-10 stand rejected under 35 U.S.C. 102(b) as being anticipated by Tomisawa. Claim 1 requires a resonator supported by the housing and positioned between the speaker and the engine for attenuating peak noise resulting in an attenuated low frequency engine noise. Tomisawa does not disclose this feature.

The examiner argues that the Tomisawa air collector 5 is a hollow chamber resonator. The examiner provides an additional reference (Krueger) to illustrate that hollow chambers act as resonators. Krueger simply states that a hollow body and an opening define a Helmholtz resonator. Krueger further describes the resonator as having a microphone located near the opening and a speaker positioned on an opposite side of the resonator from the opening.

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First, not all hollow chambers or hollow bodies are resonators. A glove box is a hollow chamber, but a glove box is not a resonator. Second, the air collector 5, which the examiner argues corresponds to applicant's resonator, is not defined by a "hollow body having an opening." Air collector 5 is a tube with two openings, i.e. one opening at each tube end.

Finally, there is no teaching in Tomisawa or in Krueger that would indicate that the air collector 5 in Tomisawa is a resonator similar to that described in applicant's specification. One of ordinary skill in the art would never consider air collector 5 in Tomisawa as corresponding to applicant's claimed resonator, especially as Tomisawa expressly describes element 5 as being an air intake collector, not a resonator. Further, the air collector 5 does not even meet the described structure of the Krueger resonator. Thus, Tomisawa does not anticipate claim 1.

For similar reasons to those discussed above, Tomisawa does not anticipate claim 9. Claim 9 also requires the resonator to attenuate peak engine noise, which results in an attenuated low frequency engine noise with the sound detector sensing this attenuated low frequency engine noise and the controller receiving and phase shifting the attenuated low frequency engine noise to attenuate the attenuated low frequency engine noise. There is absolutely no teaching in Tomisawa of the combination of a resonator attenuating a higher peak noise and a speaker, sound detector, and controller cooperating to attenuate a lower frequency engine noise. The rejection of claims 1, 2, 7, 9, and 10 under 35 U.S.C. 102(b) as being anticipated by Tomisawa is improper and must be withdrawn.

Claims 1-4, 6, 9, 10, and 13 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Brackett in view of Tanaka. There is no motivation or suggestion to modify Brackett with Tanaka. The examiner admits that Brackett does not disclose or teach the use of a resonator.

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However, the examiner argues that it would be obvious to include the resonator from Tanaka in Brackett to enhance noise cancellation. Applicant disagrees. The examiner's argument goes against the teachings of the references themselves, thus, there can be no motivation or suggestion to modify Brackett with Tanaka.

Brackett was seeking to solve a specific problem related to the tuning of the air induction system for an internal combustion engine. Brackett was seeking to avoid the limitation of a fixed number of tuning peaks, traditionally accomplished by fixed or variable length runner lengths for the intake manifold, by providing a new and unique way to obtain infinitely variable broadband tuning. Brackett accomplished this by utilizing two (2) speakers positioned at different locations within the air induction system. The use of a resonator as taught by Tanaka would only provide one additional fixed tuning peak, which was the problem that Brackett was trying to eliminate. Thus, there would be no reason to include a resonator in addition to the two speakers in Brackett.

Tanaka also supports this conclusion. Tanaka states, "the capacity of such a resonator is limited to a fixed value." Col. 1, lines 18-19. Tanaka also states that in order to achieve variable reduction of noise, a plurality of resonators had to be used. See Col 1., lincs 23-30. Tanaka further teaches that the use of multiple resonators is not desirable because of the large amount of packaging space required for such a configuration. See Col. 1, lines 31-34. Thus, Tanaka actually teaches away from the incorporation of a resonator in a system like that of Brackett. Brackett provided variable tuning by utilizing two speakers at two different locations. There would be no benefit achieved by adding a resonator of a fixed tuning value to Brackett's systems. Thus, the rejection of claims 1-4, 6, 9, 10, and 13 under 35 U.S.C. 103(a) based on the combination of Brackett as modified by Tanaka is improper and must be withdrawn.

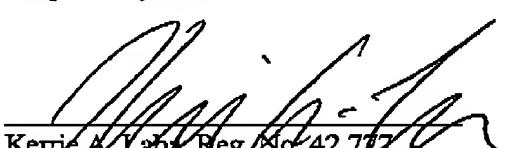
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Claims 8 and 11 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Tomisawa in view of Guenther. For the reasons set forth above, Tomisawa does not disclose, suggest, or teach the features of the claimed invention set forth in independent claims 1 and 9, from which claims 8 and 11 depend. The addition of Guenther does not make up for the deficiencies of Tomisawa. Thus, the combination does not disclose, suggest, or teach the features of claims 8 and 11.

Claims 14 and 15 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Brackett in view of Tanaka and further in view of Tomisawa. For the reasons set forth above, there is no motivation or suggestion to modify Brackett with Tanaka. The addition of Tomisawa does not make up for the deficiencies of Brackett and Tanaka. Thus, the rejection is improper and must be withdrawn.

For the reasons set forth above, all claims should be allowed. An indication of such is requested. Applicant believes that no additional fees are required, however, the Commissioner is authorized to charge Deposit Account No. 50-1482 in the name of Carlson, Gaskey & Olds for any additional fees or credit the account for any overpayment.

Respectfully submitted,


Kenne C. Olds, Reg. No. 42,762
Carlson, Gaskey & Olds
400 W. Maple Road, Ste. 350
Birmingham, MI 48009
(248) 988-8360

Dated: June 18, 2004